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Docket No.: 9988.090.00  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
*KIM, Young Soo*

Customer No.: 30827

Application No.: 10/720,749

Confirmation No.: 2778

Filed: November 25, 2003

Art Unit: 1746

For: WASHING MACHINE CONTROL METHOD

Examiner: Alexander Markoff

**Mail Stop Appeal Brief - Patents**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**REPLY BRIEF**

Sir:

In reply to the *Examiner's Answer*, mailed March 21, 2008, Appellant hereby submits  
this Reply Brief.

**TABLE OF CONTENTS**

This brief contains items under the following headings as required by 37 C.F.R. § 41.37(c):

- I. Status of Claims**
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**I. STATUS OF CLAIMS**

Total Number of Claims in the Application.

There are 9 claims pending in this application.

Current Status of Claims:

Claims canceled: None.

Claims withdrawn from consideration but not canceled: None.

Claims pending: 1-9.

Claims allowed: None.

Claims objected to: None.

Claims rejected: 1-9.

Claims on Appeal: 1-9.

**II. GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

1) Whether the rejection of claims 1-9 is proper under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,842,929 to Kim et al. (hereinafter “*Kim*”). *See Office Action* mailed September 20, 2006 at § 2.

### III. ARGUMENT

#### 1) Arguments in Reply to Section (9) of the *Examiner's Answer*

The Grounds of Rejection set forth in the *Examiner's Answer* are identical to those set forth in the *Final Office Action*, mailed September 20, 2006, with the exception of identification of a slightly narrower portion of *Kim's* specification in support of the Examiner's broad assertion that "*Kim et al* teach a method as claimed." Previously, the Examiner cited columns 4-7 of *Kim* for support. Now the Examiner cites "columns 4-7, especially column 5, line 3 - column 6, line 57." *Examiner's Answer* at p. 3, ¶ 2. As the grounds of rejection have not changed, Appellants generally maintain their Arguments, as set forth in the Appellants' Amended Appeal Brief filed on December 17, 2007, but focus the arguments set forth herein in light of the Examiner's emphasis on column 5, line 3 - column 6, line 57 of *Kim*.

#### 2) Arguments in Reply to Section (10) of the *Examiner's Answer*

Hereinbelow, Appellants reply to the *Examiner's Answer* in the order set forth in that *Answer*.

##### A) Claim 1

The Examiner maintains his position that *Kim* teaches calculating a water reduction rate. The Appellants oppose this position.

The Examiner asserts that *Kim* teaches "measuring number of re-supplies and elapsed time for re-supplies (such is readable on the water absorption rate) ...." *Examiner's Answer* at p. 4, ll. 17-19. While *Kim* counts the number of times water is resupplied, counting the number of resupply steps is not the calculation of a "rate." While *Kim* measures the time that has elapsed "from finish of the initial water supply step (S31) to respective water resupply steps (S31) ...," measuring that time is not the calculation of a "rate." *Kim* at col. 5, ll. 21-23. Moreover, *Kim* never relates the number of times water is resupplied with the measured time that elapsed between finish of the initial water supply step and any subsequent water resupply step. The absence of such a relation renders it impossible for *Kim* to describe, either expressly or

inherently, the calculation of a “rate.” As explained below, with reference to portions of *Kim* relied on by the Examiner, there is no express or inherent disclosure of, at least, “calculating a water reduction rate based on the set first water level and the sensed second water level,” as recited in independent claim 1.

The Examiner’s conclusions, which are based on an asserted teaching of *Kim*’s measuring an elapsed time for resupplies, are incorrect. *Kim* experimentally verified that “all laundry absorbs water adequately within ten minutes ....” *Kim* at col. 5, ll. 32-34. Thus, *Kim* defined a “predetermined water resupply time period,” within which all of the laundry in a drum had enough time to adequately absorb water. *Id.* at col. 5, ll. 25-35. *Kim* divided this ten-minute “predetermined water resupply time period,” into ten one-minute sub-periods. *See Kim* FIG. 4. It is noted that the labels “1minute”, “2minute”, etc. of FIG. 4 may be read as “first minute of elapsed time after finish of the initial water supply step”, “second minute of elapsed time after finish of the initial water supply step”, etc. *Id.* at col. 5, ll. 62-65 (“the final wash load is determined with reference to a number of water resupply times at each elapsed time after the initial water supply”). *Kim* further defines time zones. The first two minutes of the ten-minute “predetermined water resupply time period,” comprise “a first time zone.” The third, fourth, and fifth minutes of the ten minute period comprise “a second time zone.” The sixth, seventh, eighth, ninth, and tenth minutes of the ten minute period comprise “a third time zone.” *Id.* at FIG. 4.

*Kim* used the ten minute period to ensure that the step of supplying water to the drum (S30) (FIG. 2) lasted long enough for all of the laundry in the drum to absorb an adequate amount of water. *Id.* at col. 5, ll. 25-35. *Kim*’s controller measured the elapsed time after finish of the initial water supply step to the time where the drum was supplied with water to a “minimum level.” *Id.* at col. 5, ll. 25-32. If this elapsed time was less than ten minutes, *Kim*’s controller determined that the laundry was not adequately wet and repeated the determining and

rotating steps to assist the laundry in absorbing water. *See* FIG. 2, S35 (“NO” branch of S35 returns to S33 and S34); *see also* col. 5, ll. 36-41. Conversely, if the elapsed time was greater than ten minutes, *Kim*’s controller determined that the laundry was adequately wet and stopped the water supply to the drum sequence S30. *See* FIG. 2, S35 (“YES” branch of S35 proceeds to S40); *see also* col. 5, ll. 42-45.

In light of the argument above, Appellants assert that *Kim* does not measure the “elapsed time for re-supplies” as asserted by the Examiner. *Examiner’s Answer* at p. 4, ll. 17-19. Rather, *Kim* measures elapsed time after finish of the initial water supply step to the point in time when water in the drum reaches a minimum level. *Kim* makes this measurement to determine if the elapsed time has exceeded the ten minute “predetermined water resupply time period.” The measurement is not used to calculate any type of water absorption rate, or water reduction rate, as asserted by the Examiner. *See Examiner’s Answer* at p. 4, ll. 17-19. The measurement of elapsed time and the ten-minute “predetermined water resupply time period” have nothing to do with “calculating a water reduction rate based on the set first water level and the sensed second water level,” as recited in independent claim 1.

The number of water re-supplies in each time zone are used for the purpose of indicating if the final washing load (*i.e.*, the laundry and water in the drum) is a “light” or “heavy” load. *See id.* at col. 5, ll. 52-55. Washing may then be carried out according to a washing method consistent with whether the drum holds a “light” or “heavy” load, providing the benefit of, for example, prevention of overload to the motor to thereby enhance washing performance. *See* column 7, lines 54-65. The number is not used, as may be imagined by the Examiner, to derive a volume or weight of water added to the drum. The number is not used to compute the value “F,” which is the sum of a unitless number of water re-supply times during each of the three time zones, multiplied by a unitless weighting factor (not to be confused with the weight, or

heaviness, of the combined laundry and water in the tub). *See* column 6, lines 33-67. The sum of the product of unitless numbers is itself a unitless number. *See* col. 6, ll. 54-67. A unitless number cannot be a “rate.” Therefore, *Kim*’s counting of the number of water resupplies cannot possibly anticipate “calculating a water level reduction rate,” as recited in claim 1.

Finally, the Examiner states that “*Kim* et al teach comparing the water absorption during different time periods.” *Examiner’s Answer* at p. 5, ll. 1-2 (citing *Kim* at col. 3, ll. 34-39 and col. 6, ll. 18-33). The Examiner presumably makes this statement in support of an assertion that *Kim* teaches “calculating a water reduction rate based on the set first water level and the sensed second water level,” as recited in independent claim 1. If so, the Examiner misunderstands *Kim*’s disclosure. In the portion of *Kim*’s detailed specification cited by the Examiner, *Kim* describes an observation concerning the rate of water absorption of laundry. The text is shown below:

Statistically, the laundry actively absorbs water shortly after the laundry contacts the water. The rate of absorption is reduced as the actual water absorbed approaches the maximum water bearing ratio of the laundry. The water absorption rate of the laundry increases after a slight time period is passed, is constant for a certain time period, and decreases as the amount of absorbed water approaches the maximum water bearing amount. Accordingly, taking such a water bearing property into account, in the present invention, the first time zone is set to be zero to three minutes, which is assumed to be an initial stage of water absorption; the second time zone is set to be three to six minutes, which is assumed to be an intermediate stage in which the water absorbing rate increases; and the third time zone is set to be six to ten minutes which is assumed to be a final stage of the water absorption.

*Kim* at col. 6, ll. 18-33. *Kim*’s observation cannot be reasonably construed as teaching “calculating a water reduction rate based on the set first water level and the sensed second water level,” as recited in independent claim 1, *vis-à-vis* “comparing water absorption during different time periods.” Rather, *Kim*’s observation serves to explain why the ten minute “predetermined

water resupply time period,” is subdivided into three “time zones,” and why different weighting factors are applied to the three time zones.

For at least all of the reasons stated in Appellants’ Amended Appeal Brief, as well as the reasons stated herein, *Kim* entirely fails to describe, either expressly or inherently, at least, “calculating a water reduction rate based on the set first water level and the sensed second water level,” as recited in independent claim 1.

Therefore, the rejection of claim 1 under 35 U.S.C. § 102(e) as being anticipated by *Kim* is improper and should be reversed.

**B) Claim 2**

The Examiner’s explanation of why Appellants’ arguments with respect to claim 2 are not persuasive is, respectfully, befuddled. Even if, *assuming arguendo*, *Kim* teaches re-supplying at different time zones where the time zones have different absorption rates, the Examiner’s assertion that the time zones “were determined and compared to the stored information,” respectfully, makes no sense. In the end, the Examiner’s assertion fails to provide any proof that *Kim* describes, either expressly or inherently, that “the water is re-supplied according to the first water level, if the calculated water level reduction rate is less than the predetermined value,” as recited in claim 2.

Therefore, the rejection of claim 2 under 35 U.S.C. § 102(e) as being anticipated by *Kim* is improper and should be reversed.

**C) Claims 3 and 8**

The Examiner’s explanation of why Appellants’ arguments with respect to claims 3 and 8 are not persuasive is not supported by common sense. Even if, *assuming arguendo*, *Kim* teaches “supplying to the minimum level and to the level higher than minimum level,” as asserted by the Examiner, this only describes two levels. In the end, the Examiner’s assertion fails to provide

any proof that *Kim* describes, either expressly or inherently, that “the water is re-supplied according to a third water level if the calculated water level reduction rate is greater than or equal to the predetermined value,” as recited in claim 8, and as recited in claim 3 by virtue of its dependence on claim 8.

Therefore, the rejection of claims 3 and 8 under 35 U.S.C. § 102(e) as being anticipated by *Kim* are improper and should be reversed.

**D) Claims 4-6**

The Examiner relies on a belief that *Kim* teaches “calculating the rate considering all zones.” *Examiner’s Answer* at p. 5, ll. 16-17. However, as argued in Appellants’ Brief and hereinabove, *Kim* fails entirely to teach “calculating a water reduction rate ...,” as recited in independent claim 1, from which claims 4-6 directly or indirectly depend. Moreover, even if, *assuming arguendo*, the Examiner’s assertion could be substantiated, the *Examiner’s Answer* fails to provide any proof that *Kim* describes, either expressly or inherently, “sensing and calculating steps are each repeated, to obtain an average rate of water level reduction, and wherein the user-selected wash course is reset based on the average rate of water level reduction,” as recited in claim 4, or that the “sensing and calculating steps are each repeated three times,” as recited in claim 5, or that the “sensing and calculating steps are each repeated four times,” as recited in claim 6.

Therefore, the rejections of claims 4, 5, and 6 under 35 U.S.C. § 102(e) as being anticipated by *Kim* are improper and should be reversed.

**F) Claim 9**

The Examiner explains that Appellants’ arguments with respect to claim 9 are “not persuasive because at least at column 5, lines 2-49, *Kim et al* teach [comparing water levels over a time, calculating water reduction rate base on such comparing and determining re-supply

amount based on the calculated rate].” *Examiner’s Answer* at p. 6, ll. 1-5. However, as described above with respect to claim 1, *Kim* generally discloses, at col. 5, ll. 2-49, that a water level sensor keeps measuring the water level in the drum, the drum keeps rotating to aid the laundry in absorbing water, and the controller keeps comparing the measured water level to a preset minimum water level, so long as the elapsed time since completion of the initial water supply is less than the “predetermined water resupply time period” of ten-minutes. *See Kim* at col. 5, ll. 2-49. Even if, *assuming arguendo*, the Examiner’s assertion was correct (which it is not), the *Examiner’s Answer* fails to provide any proof that *Kim* describes, either expressly or inherently, “calculating a water level reduction rate by comparing the first water level and the second water level over time,” or that a water level reduction rate (which *Kim* does not calculate) is a factor in “determining a water re-supply amount,” both as recited in independent claim 9.

Therefore, the rejection of claim 9 under 35 U.S.C. § 102(e) as being anticipated by *Kim* is improper and should be reversed.

**IV. CONCLUSION**

Appellants note that the Examiner failed to provide any answer to Appellants arguments regarding patentability of claim 7. This silence supports Appellants arguments that the rejection of claim 7 under 35 U.S.C. § 102(e) as being anticipated by *Kim* is improper and should be reversed.

For all the above reasons, Appellant respectfully requests that this Honorable Board find as follows:

- 1) The rejection of claims 1-9 under 35 U.S.C. § 102(e) as being anticipated by *Kim* is improper and should be reversed.

Appellants believe that no fees are due with this Reply Brief. However, if any fees are due, the Patent and Trademark Office is hereby expressly authorized to charge any fees required to complete the filing of this Reply Brief to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911.

Dated: May 20, 2008

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